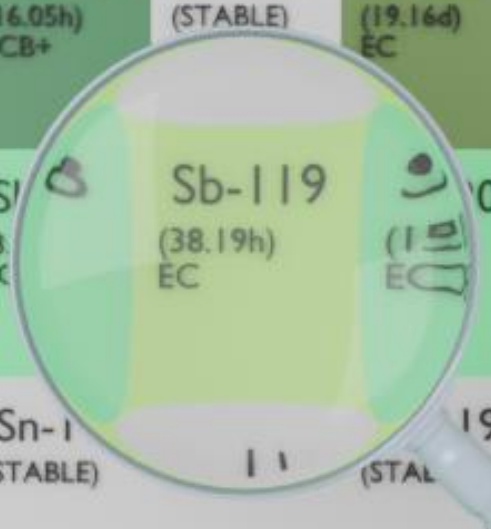




Te-116 (2.49h) CB+	Te-117 (62m) ECB+	Te-118 (6.00d) EC	Te-119 (16.05h) ECB+	Te-120 (STABLE)	Te-121 (19.16d) EC	Te-122 (STABLE)	Te-123 (6.00E+14y) EC	Te-124 (STABLE)
Sb-115 (2.1m) CB+	Sb-116 (15.8m) ECB+	Sb-117 (2.80h) ECB+	Sb-118 (3.1m) ECB+	Sb-119 (38.19h) EC	Sb-120 (1.5m) ECB+	Sb-121 (STABLE)	Sb-122 (2.7238d) B-ECB+	Sb-123 (STABLE)
Sn-114 (STABLE)	Sn-115 (STABLE)	Sn-116 (STABLE)	Sn-117 (STABLE)	Sn-118 (STABLE)	Sn-119 (STABLE)	Sn-120 (STABLE)	Sn-121 (27.03h) B-	Sn-122 (STABLE)

ANTIMONY-119

SUMMARY DATA

GENERAL

CLASSIFICATION

Isotope: Sb-119
Atomic number (Z): 51
Mass number (A): 119
Neutron number (N): 68

RADIOACTIVE DECAY

Decay modes: Electron capture
Half-life: 38.19 [h]
Decay constant: 5.0417e-06 [1/s]
Daughters: Sn-119 (100.0%)
Radioactive daughters: None

DOSIMETRIC CONSTANTS

Mean alpha energy: 0.0 [MeV]
Mean electron energy: 0.02583 [MeV]
Mean photon energy: 0.02341 [MeV]
Air kerma rate constant, Γ_{10} : 7.426e-18 [Gy·m²/Bq·s]
Air kerma coefficient, K_{air} : 7.426e-18 [Gy·m²/Bq·s]
Equilibrium dose constant for weakly-penetrating radiations (α and/or electrons), Δ_{wp} : 4.138e-15 [Gy·kg/Bq·s]
Equilibrium dose constant for alphas, Δ_{α} : 0.000e+00 [Gy·kg/Bq·s]

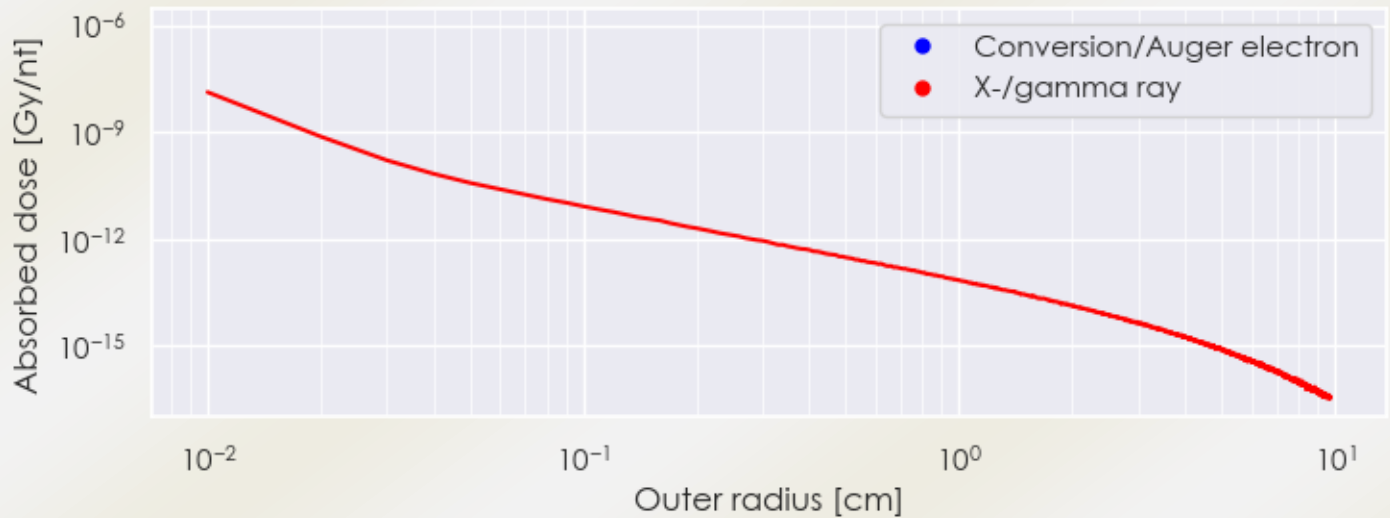
Equilibrium dose constant for betas/electrons, $\Delta_{\beta-, \beta+, e-}$: 4.138×10^{-15} [Gy·kg/Bq·s]

Equilibrium dose constant for photons, Δ_p : 3.751×10^{-15} [Gy·kg/Bq·s]

DOSE POINT KERNELS (PLOT)

Dose point kernel source: **Graves, et al. Medical Physics. 2019 Nov.; 46(11):5284-5293.**

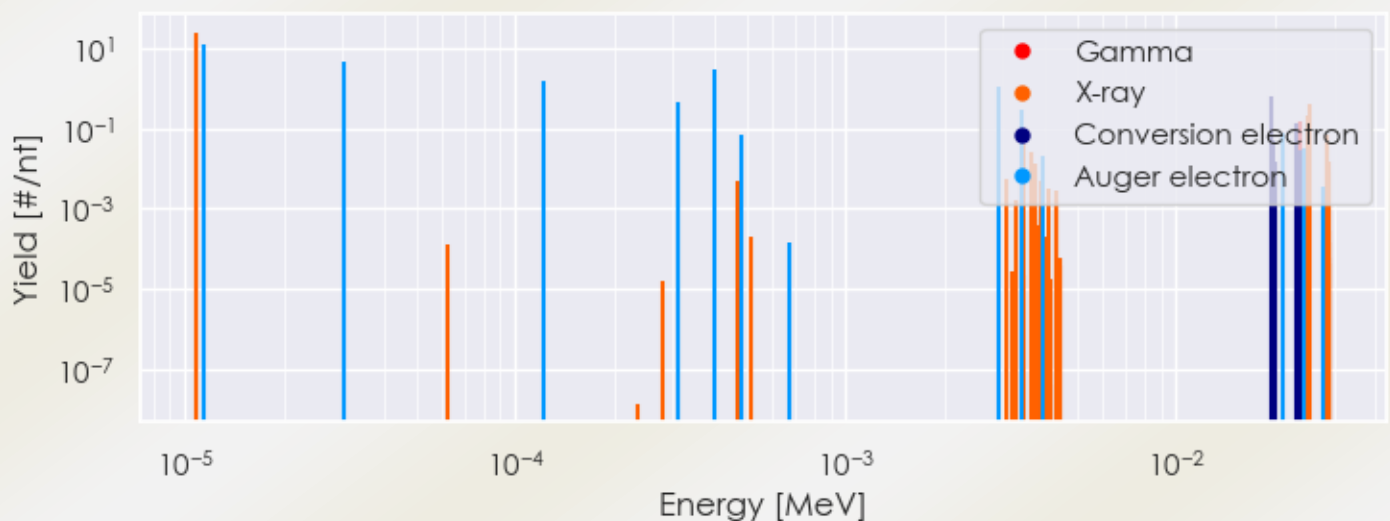
Note: Bins are spaced every 0.1 mm until a radius of 10 cm, and every 1 mm until a radius of 2 m.



Download tabulated dose point kernel file here: www.mirdsoft.org/products/MIRDspecs/Sb-119 DPK.csv

SUMMARY SPECTRA (PLOT)

Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**



Download tabulated summary spectra file here: www.mirdsoft.org/products/MIRDspecs/Sb-119 Summary Spectrum.csv

TABULATED DATA

SUMMARY SPECTRA (TABLE)

Spectra source: **ICRP Publication 107: Nuclear Decay Data for Dosimetric Calculations. Ann. ICRP 2008, 38 (3).**

Note: Radiations with yield < 0.01 are excluded from the table, but are available in the linked *.csv data.

Download tabulated summary spectra file here: [www.mirdsoft.org/products/MIRDspecs/Sb-119 Summary Spectrum.csv](http://www.mirdsoft.org/products/MIRDspecs/Sb-119%20Summary%20Spectrum.csv)

Energy [MeV]	Yield [#/(nt)] if > 0.01	Radiation type
1.08551e-05	2.552e+01	X-ray
3.43219e-03	4.232e-02	X-ray
3.65722e-03	2.687e-02	X-ray
3.72998e-03	1.391e-02	X-ray
2.38700e-02	1.603e-01	Gamma
2.50232e-02	2.109e-01	X-ray
2.52572e-02	3.946e-01	X-ray
2.84307e-02	3.560e-02	X-ray
2.84736e-02	6.913e-02	X-ray
2.90882e-02	1.425e-02	X-ray
1.13556e-05	1.261e+01	Auger electron
3.01801e-05	4.497e+00	Auger electron
1.21194e-04	1.493e+00	Auger electron
3.09439e-04	4.809e-01	Auger electron
3.99045e-04	2.940e+00	Auger electron
4.80337e-04	6.861e-02	Auger electron
2.89993e-03	1.155e+00	Auger electron
3.42450e-03	3.007e-01	Auger electron
3.97195e-03	2.018e-02	Auger electron
1.94297e-02	6.115e-01	Conversion electron
1.97092e-02	5.073e-02	Conversion electron
1.99432e-02	1.417e-02	Conversion electron
2.09334e-02	7.952e-02	Auger electron
2.31597e-02	1.333e-01	Conversion electron
2.38700e-02	2.997e-02	Conversion electron
2.44171e-02	3.387e-02	Auger electron

USEFUL LINKS

Isotope decay characteristics are periodically updated as better measurements can be made - changes that may not be reflected on this page. Please see useful links:

National Nuclear Data Center (NNDC): <https://www.nndc.bnl.gov/nudat3/mird/>

International Atomic Energy Agency (IAEA) Livechart: <https://www-nds.iaea.org/relnsd/vcharthtml/VChartHTML.html>

REFERENCE LINKS

ICRP Report 107: <https://www.icrp.org/publication.asp?id=ICRP%20Publication%20107>

Graves et al. Dose Point Kernels: <https://doi.org/10.1002/mp.13789>

MIRD Decay Schemes 2nd Edition: https://sites.snmmi.org/SNMML-MAIN/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=0-932004-80-6